Chapter 2
Texas Health Care Workforce Update

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INTRODUCTION

The *1999-2004 Texas State Health Plan (SHP)* described the need for an adequate, accessible, and quality health care workforce. Data tables and supply distribution maps were presented in the SHP to illustrate the status of the health care workforce in Texas during 1998. This chapter in the 2001-2003 *State Health Plan Update* continues the analysis of the workforce with 1999 data and the use of workforce models to forecast the supply and requirements for selected professions.

After a discussion of issues related to workforce monitoring and forecasting, a set of selected health professions will be described. Because the Health Professions Resource Center (HPRC) supports the Health Professions Shortage Area designation function of the U.S. Health Resources and Services Administration (HRSA), it has focused its supply and forecasting efforts on those health professions that are incorporated into those designations. That includes primary care physicians and non-physician primary care providers such as nurses and physician assistants for the HPSA Primary Care designation. Dentists are included for the Dental HPSA designation, and psychiatrists and other mental health workers are included in the Mental Health HPSA designation.

The descriptions of these professionals include demographic information and their geographic distribution. The supply trends and requirements forecasts for each of these selected health professions will be evaluated in a separate section. The requirements forecasts were based on the Integrated Requirements Model, beta-test version 3.1 (IRM3.1), that was developed by the U.S. Department of Health and Human Services (U.S. DHHS), Bureau of Health Professions (USBHP). (Note: the term health care professional is used interchangeably in this chapter with the terms provider and practitioner.) Dentists are not evaluated by the IRM3.1 model.

Data and Workforce Modeling

A large number of interrelated factors influence how many providers Texas will need in the future. Since no one workforce model incorporates all of these factors, the use of models to forecast the supply and requirements of providers must be carefully interpreted, especially since these forecasts may be used to formulate state policies and plans. Thus, it is important to know data limitations and the limitations of workforce analyses. Data used for forecasts are dated the moment they are incorporated into the model and some of the data used in models for forecasting are actually forecasts themselves and are subject to considerable change over time. With these caveats in mind, a variety of data sources and methods were used in this report to analyze the workforce and to forecast what could happen to the workforce between now and 2006, a possibly dynamic period in Texas's health care delivery market.

Data Sources and Deficiencies

State licensing boards provided the current (1999) and historical licensee data used to forecast the supply of selected health care personnel and to construct graphs illustrating supply trends. Some licensee data were part of the historical collections stored at the HPRC as "paper" summary reports. Other data were available from the HPRC in a database format that contained the names and information for all licensees in a given year. These historical databases are important because to our knowledge state licensing boards do not maintain historical databases on their licensees.

The supply statistics reported in this chapter and on the HPRC website differ from the statistics available from the individual boards' published reports and websites. The boards' statistics usually include *all* licensee records, with the possible exception of licensees who are practicing out-of-state. The HPRC's statistics include only the active, permanent, within-state workforce. Thus, the HPRC's data *excludes* federal, government, resident/fellow, retired, and a few other categories of professionals. This is done to comply with federal and national practices concerning the reporting of workforce supply statistics.

Changes in licensee data are usually updated during the license renewal process at the 20+ state health professions regulatory boards, either on an annual or biennial basis. Since most data fields are voluntary fields for completion by the licensee, and each board collects different amounts and types of data on their licensees, the quality and quantity of data collected vary greatly among the boards and require different

amounts of editing by HPRC staff before analyses are possible. For example, some boards do not collect race and ethnicity data while other boards do. In other cases, providers do not give address data in a format that allows for geo-coding, or do not report gender and other data on which descriptive statistics can be determined. The Statewide Health Coordinating Council's Ad hoc committee on Health Personnel Data has proposed a minimum data set for health professionals which would provide for more complete and consistent data on licensed health professionals (see Appendix A).

Workforce Models Used in this Report

Two methods or models were used to predict how many and what type of health care personnel will be needed in tomorrow's complex and integrated health care delivery system. Although there are numerous variables that affect the delivery of health care to Texans, only a few of these are employed by existing workforce models. No one method or model is totally reliable for predicting how many, what type, and in what location providers will be needed in the future. A brief description of the methods used in this report follows.

1. *Forecasting the Supply of Physicians and Other Providers to the Year 2006.* A regression program was used with the HPRC's historical supply data, expressed as the ratio of providers per 100,000 population, to forecast supply numbers to the year 2006. The regression program used supply data for the years 1990 through 1999 where available.

   Ratios are some of the simplest mathematical models used by analysts to study workforce supply because they take into account only two types of data variables: population changes and provider supply. An example of a ratio would be the number of dentists per 100,000 people in a county or a census tract.

   Since annual population changes and provider numbers are integral to the calculation of ratios, ratios can be compared across years whereas simple provider totals cannot. Ratios may also be used to compare areas of the state across years and to compare state estimates to federal or state "benchmarks." A drawback of ratios is that they explain little about the dynamics occurring in the health care system that acutely affect provider supply, such as

compensation rates, aging of the workforce, how and to whom care is given, and in what settings care is delivered.

2. *Forecasting the Requirements for Physicians and Non-Physician Providers to the Year 2006.*

   The USBHP IRM3.1 workforce requirements model used in this report translates the expected utilization or need for specific health care services into requirements for particular health professionals. This particular workforce model comes pre-loaded with U.S.-level data that can be changed or replaced with Texas-level data. The IRM3.1 model has been used by the Wisconsin Network for Health Policy Research (1996) and the Texas Medical Association (1999) to estimate the requirements for physicians in certain medical specialties.

   The IRM3.1 also has a substitution factor for non-physicians. Using various populations, insurance coverage and practice plan scenarios; the model paints a picture of what kind of health care provider mix might be necessary to meet future state health care needs. For the purposes of this report, the HPRC looked at both a status quo scenario and a high managed care scenario to establish a range of potential health care professional requirements.